REMARKS

Reconsideration and further examination of the subject application, in view of the remarks below, are respectfully requested.

Status of Claims

Claims 1 and 22-26 remain pending in the application. Each of these claims is under consideration.

Claim Rejections – 35 U.S.C. § 103

Claims 1 and 22-26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as being obvious over Peoples (U.S. Patent No. 4,508,771). For the following reasons, this rejection should be withdrawn.

In the Advisory Action, the Examiner states that "at least the presently claimed polymers of low density polyethylenes and metallocene based polyethylenes may be classified as olefinic elastomers." Applicants respectfully disagree. The present application considers elastomers to be different from low density polyethylenes and metallocene-based polyethylenes. See, e.g., page 3, line 17 – page 4, line 2. Here, the application mentions elastomers along side with low density polyethylenes and metallocene-based polyethylenes. This indicates to persons skilled in the art that the present application does not consider low density polyethylenes and metallocene-based polyethylenes to be elastomers, but independent of it.

The Advisory Action also cites Dow's ENGAGE polymer product as an example of olefinic elastomers of low density polyethylene. While Dow calls its product an elastomer, the product does not qualify as an "elastomer" in the traditional sense of the word. The word "elastomer" is traditionally used as another term for rubber. See, e.g., the definition of Elastomer from Wikipedia (Attachment A). In this traditional meaning of the term, Dow's ENGAGE product does not qualify as an "elastomer" because even Dow characterizes the ENGAGE product as "bridg[ing] the gap between rubber and plastic." See Attachment B.

Since Peoples fails to disclose or suggest each feature of the present invention, there's no *prima facie* case of obviousness, much less one of anticipation. Therefore, the rejection under 35 U.S.C. §§ 102/103 should be withdrawn.

Conclusion

In summary, Applicants believe the application to be in condition for allowance. Accordingly, the Examiner is respectfully requested to reconsider the rejection(s), remove all rejections, and pass the application to issuance.

Respectfully submitted,

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CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

Jo Ann Elam
Jo Ann Elam

May 17, 2006
Date

Elastomer

From Wikipedia, the free encyclopedia

The term **elastomer** is often used interchangeably with the term rubber, and is preferred when referring to vulcanisates. Elastomer comes from two terms, *elastic* (describing the ability of a material to return to its original shape when a load is removed) and *mer* (from polymer, in which *poly* means *many* and *mer* means *parts*). They are amorphous polymers existing above their glass transition temperature, so that considerable segmental motion is possible. At ambient temperatures rubbers are thus relatively soft (E~3MPa) and deformable. Their primary uses are for seals, adhesives and molded flexible parts.

Elastomers are usually thermosets (requiring vulcanization) but may also be thermoplastic (see thermoplastic elastomer). The long polymer chains cross-link during curing and account for the flexible nature of the material. The molecular structure of elastomers can be imagined as a 'spaghetti and meatball' structure, with the meatballs signifying cross-links.

Examples of elastomers:

- Natural Rubber
- Polyisoprene
  - Butyl Rubber (copolymer of isobutylene and isoprene)
- Polybutadiene
  - Styrene Butadiene Rubber or SBR (copolymer of polystyrene and polybutadiene)
  - Nitrile Rubber (copolymer of polybutadiene and acrylonitrile), also called buna N rubbers
- Chloroprene Rubber, polychloroprene, also called Neoprene
- Silicone RTV
- FKM Viton®, Tecnoflon®(copolymer of vinylidene fluoride and hexafluoropropylene)
- Santoprene®
- Fluorosilicone Rubber
- EPM and EPDM rubber (**ethylene propylene rubber**, a copolymer of polyethylene and polypropylene)
- Polyurethane rubber
- Resilin
- Polyacrylic rubber (ABR)
- Epichlorohydrin rubber (ECO)
- Polysulfide Rubber
- Chlorosulfonated Polyethylene (CSM), (Hypalon®)

References

- Budinski, Kenneth G., Budinski, Michael K., *Engineering Materials: Properties and Selection*, 7th Ed, 2002. ISBN 0-13-030533-2.
- Expanation of properties and application of some elastomers: http://www.timcorubber.com/definitions/index.asp
- Comparison table of elastomer proberties: http://www.timcorubber.com/definitions/Comparison_to_Elastomer_Properties.pdf

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- ENGAGE™ polyolefin elastomers
- NORDEL™ IP and MG hydrocarbon rubber
- TYRIN™ chlorinated polyethylene

What do these products bring to Dow's already broad portfolio of specialty plastics and elastomers? Fantastic market solutions:

- You can bridge the gap between rubber and plastic with versatile ENGAGE polyolefin elastomers, produced using INSITE™ Technology. They can be used to modify materials or as the sole polymer in molded or extruded goods. ENGAGE polymers offer a combination of flexibility and processability, low density, colorability and outstanding touch and feel.
- Set higher standards in EPDM performance with NORDEL hydrocarbon rubber products, also produced using INSITE Technology. NORDEL IP hydrocarbon rubber improves yield, reduces scrap and provides exceptional polymer cleanliness, while NORDEL MG rubber delivers outstanding mixing performance.
- Use TYRIN chlorinated polyethylene (CPE) resins in plastics processing to increase impact strength and resistance to ignition, chemicals, heat, low temperatures and weathering. Applications range from vinyl siding to computer housings and wire and cable. As the pioneer of CPE, Dow leads the way in advances and supply.

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